

## AbstractID: 11981 Title: Medical Response to a Radiological/Nuclear Event

Planning for and exercising the medical response to potential mass casualty radiological and nuclear (rad/nuc) events from accidents or terrorism are very new responsibilities for most physicians, nurses, emergency medical technicians/paramedics and other healthcare professionals. Many medical professional societies are attempting to define the essential knowledge base and performance skills needed to certify readiness and competence in this area of disaster medicine.

Medical physicists and the entire spectrum of radiation safety professionals have critical expertise needed for event preparedness. They can

- Help educate medical personnel to understand radiation issues and gain comfort with techniques and procedures needed to perform effectively and safely
- Help develop appropriate response plans if plans are non-existent or inadequate, and assist with iterative plan improvement and assessment in formal exercises
- Identify, procure, store, and maintain required response equipment

During events they will help protect first responders, victim transport personnel, and first receivers in hospitals and other medical facilities along the entire continuum of the medical response. Radiation safety professionals may be asked to

- Assist event managers and security personnel in establishing safe response zones
- Supervise or perform radiation surveys of victims and responders
- Assist with estimates of absorbed dose received by both victims and responders,
- Support the implementation of appropriate protective actions
- Participate in the collection and transport of radiation bioassays for contamination
- Supervise decontamination of victims and responders
- Assist with short and long term tracking of both victims and responders

Threat analysis has identified a list of isotopes of potential concern for mass casualty events. Selected medical countermeasures will be recommended for victims with certain levels of contamination and/or exposure.

For physics professionals planning to assist in rad/nuc mass casualty responses, knowledge about existing Federal, State, and local medical response plans in your area is crucial. Implementation of the Hospital Incident Command System will integrate medical activities with other response activities, including public information, forensics, and security.

This lecture will provide an overview of

- The kinds of mass casualty rad/nuc events that have received the most attention from homeland security and medical planners
- The isotopes of concern for mass casualty events
- Available radiation countermeasures for exposure and contamination
- Some of the issues surrounding the assessment of contamination and performance of decontamination in mass casualty events
- The “radiation response zones” likely to be established during certain events
- Suggestions for initiating and equipping rad/nuc medical response teams in your hospital
- How to volunteer to be on rad/nuc response teams
- A bibliography of useful publications and web sites

### **Learning objectives: After attending this lecture, students will be able to**

1. Describe the radiological and nuclear events of greatest concern to US government response planners
2. Identify isotopes of concern and medical countermeasures likely to be associated with various kinds of events
3. Identify the radiation zones likely to be associated with managing the response to a nuclear detonation